LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES



OFFICE OF FISHERIES INLAND FISHERIES SECTION

PART VI -A

WATERBODY MANAGEMENT PLAN SERIES

LAKE BRUIN

LAKE HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

DOCUMENT SCHEDULED TO BE UPDATED ANNUALLY

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LAKE HISTORY

GENERAL INFORMATION

Historic Information

Lake Bruin was naturally formed prior to recorded history (dates back to first Spanish explorers) when the Mississippi River changed course and formed this oxbow lake. It was completely separated from the river by federal flood control levees in the 1920's. A gated spillway was constructed by Public Works in the 1950's that raised the pool stage several feet and was later modified by the Tensas Parish Police Jury to raise it to the present level of 62.0 feet MSL.

Waterbody

Owners

State of Louisiana; all of the lake bed below the mean low water line is state water bottoms, except the shallow flats area at one end of the lake known as "Brushy" where private ownership was established from old Spanish land grants prior to LA becoming a state (Figure 1).

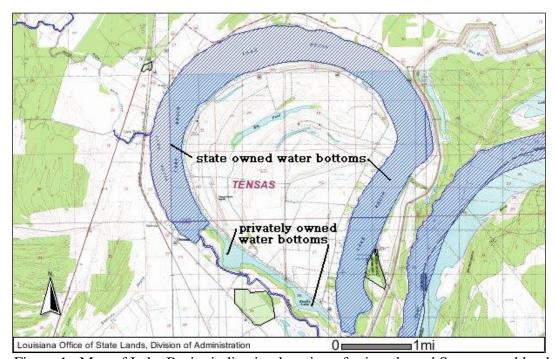


Figure 1. Map of Lake Bruin, indicating location of privately and State owned lands.

Purposes for Creation
Naturally formed exhaus

Naturally formed oxbow lake

Physical description

Lake Bruin is a 2,842 acre oxbow shape having a steep sloping shore on the outside bend and shallow flats on each end. Watershed size is 13,700 acres (watershed ratio = 4.8:1).

The lake is approximately 0.5 miles in width with a shoreline of approximately 9.2 miles. Lake Bruin is a relatively deep lake compared to other Louisiana lakes with a depth of 22.9 feet and greater over more than 50 percent of the lake surface area (USGS). Pool stage is 62.0 feet MSL. The shoreline is lined with bald cypress (*Taxodium distichum*).

"Bathymetric Survey and Physical and Chemical Related Properties of Lake Bruin, Louisiana" Water-Resources Investigations Report 98-4243, published by USGS in 1997

http://la.water.usgs.gov/pdfs/bruin.pdf

Natural seasonal water fluctuation

Natural seasonal water fluctuation is typically less than 4 feet during the course of a year. Exceptional water levels do occur as the product of extended drought or extensive rainfall. Flooding occurred in September of 2008 with the landfall of Hurricane Gustav

Parish/s located

Tensas Parish, 4 miles N. of St. Joseph, LA

Drawdown description

It takes at least 30 days to draw the lake from pool stage (elevation 62.0' MSL) to the bottom of the spillway (elevation 56.3' MSL) and longer if it rains. Due to sedimentation and obstructions in the bottom of the Ruth Ditch outflow channel, the flow now cuts off before the bottom of the spillway is reached (around elevation 57.0' MSL).

Spillway – 22' wide concrete wall; overtops at 62' MSL

Gate size -6'x 6' each

Number of gates - 2

Condition -good; replaced fall 2011

Flow rate – With both gates open, about 200-400 cubic feet per second flow through the gates, depending on head. Typical rate of reduction in water elevation with both gates fully opened is 2-3 inches per 24 hour period.

Who controls

The Spillway gates are controlled by the Lake Bruin Recreation and Water Conservation District under the guidance and supervision of LA Dept. of Wildlife & Fisheries.

LAKE AUTHORITY

Association

Lake Bruin Recreation and Water Conservation District

Members - Mike Thompson (President)

Drew Evans (Vice President)

Donald Barraza Kirby Black Tim Gregory Gary Smith L.J. Thompson

Contact information – Gary Smith, phone 318-282-4726

Authorization

Louisiana State Legislature, Act No. 1045 1995 Regular Session by Representative Bryant Hammett, **APPENDIX I**. The legislation may be reviewed at the following link:

http://www.legis.state.la.us/lss/lss.asp?doc=95406&showback=

ACCESS

Lake Contour Maps published by LA Wildlife & Fisheries in 1971; (SEE <u>APPENDIX II</u> – ACCESS MAP)

Boat docks (Commercial)

Netterville's Boat Launch and Cabins – 1264 Hwy. 606, phone:(318)766-4585 Cannella's Boat Launch and Cabins – 1078 Hwy. 606, phone:(225)776-6195

Piers

Several hundred private piers, 3 commercial marinas and one State Park

State/Federal facilities

Lake Bruin State Park at the link below:

http://www.crt.state.la.us/parks/iLkbruin.aspx

Reefs

LDWF has placed over 200 artificial fish attractors in Lake Bruin at the following locations (Table 1.):

Table 1. Artificial Reef locations in Lake Bruin, LA.

REEF	LOCATION	DESCRIPTION	
Osceola	N 31° 58' 22.4"	46 attractors dropped in triangle formation	
Reef	W -91° 15' 04.4"		
Island Reef	N 31° 59' 59.0"	109 attractors dropped in circle formation	
Island Reel	W -91° 14' 22.1"		
State Park Reef	N 31° 57' 41.9" W -91° 12' 10.6"	55 attractors dropped in oblong formation, 23 of which are adjacent to public fishing pier at Lake Bruin State Park.	

SHORELINE DEVELOPMENT

State/National Parks

Lake Bruin State Park, operated by Louisiana Office of State Parks, has RV campsites, wheel chair accessible public fishing piers and a public swimming area.

http://www.crt.state.la.us/parks/iLkbruin.aspx

Shoreline development by landowners

Except for the state park at one end of the lake, the entire shoreline is extensively developed with private homes, camps and piers.

EVENTS / PROBLEMS

- 1. Increased soil erosion and silt laden runoff entering Lake Bruin.
- 2. Construction of the spillway in the 1950's, raised the summer pool stage of the lake, stabilized water levels and essentially eliminated the natural occurring annual low water season that occurred prior to spillway construction.
- 3. Deposition of soft silts over parts of the lake bottom, particularly in the shallow portion known as "Brushy" has degraded nesting fish spawning habitat.
- 4. The Tensas Parish Police Jury has opened spillway gates in the spring to reduce pier flooding. This reduction of spring high water during the spawning season reduces spawning success of nesting game fish.
- 5. In the early 1980's, anglers complained that fishing in general and especially crappie fishing was not as good as it had been in the past. LDWF was asked to investigate the problem and make recommendations to the Police Jury and Lake Commission. Recommendations included a series of lake drawdowns to emulate the natural flooding and drying cycle that occurred prior to spillway construction.

6. Lake level has become partially influenced by the level of the Mississippi River, though it is unknown for how long this has been occurring. During extremely high river stages, water level will rise in Lake Bruin from seepage through sand deposits. Also, when the river reaches very low levels, seepage will occur in the opposite direction, causing the lake level to drop.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Submerged vegetation includes: Southern naiad (*Najas guadalupensis*), American pondweed (*Potamogeton nodosus*) and coontail (*Ceratophyllum demersum*)

Floating vegetation includes: alligator weed (*Alternanthera philoxeroides*), water primrose (*Ludwigia sp.*), water hyacinth (*Eichhornia crassipes*), American lotus (*Nelumbo lutea*)

Type map

The lake was type mapped in the years 1983, 1988, 1990, 1999, 2000, 2001 and 2006 – There was less than 20% coverage of aquatic vegetation based on the most recent typemap. (SEE TYPEMAP RESULTS – APPENDIX III)

Biomass

No vegetation biomass sampling conducted

Treatment history by year available

Biological

Grass carp (*Ctenopharyngodon idella*) have been collected in Lake Bruin and are possibly the product of unauthorized stockings. No biological control agents have been introduced by LDWF.

Chemical

Glyphosate and 2-4,D are used for water hyacinths, alligator weed and water primrose, and are typically applied at 0.75 gals/acre and 0.5 gals/acre, respectively. American lotus control has been achieved primarily with glyphosate due to a 2-4,D waiver requirement during its peak growing season (May – November). The waiver period is March 15th – September 1. Table 2 lists the acres of vegetation treated with herbicide from 1997 – 2005.

Table 2. Acres of vegetation treated with herbicide on Lake Bruin, 1997 – 2005.

Year	Acres Sprayed	Vegetation	
1997	20	Mixture	
1997	15	Lily Pad	
1999	1	Hyacinth	
2000	9	Hyacinth	
2001	32	American Lotus	
2001	49	Mixture	
2002	70	Alligator weed	
2003	25	Alligator Weed	
2004	31	Alligator Weed	
2004	26	Mixture	
2005	16	Mixture	

Most of the recent herbicide applications have taken place in the Brushy Lake area for control of lotus, alligator weed, and coontail. These species comprise the majority of the vegetation sprayed since 2007 (Table 3).

Table 3. Total acres of vegetation treated with herbicide on Lake Bruin, 2006 – 2012.

Year	Most Common Species Treated	Acres Sprayed
2006	N/A	N/A
2007	American lotus, alligator weed, cutgrass	237
2008	Alligator weed, A. lotus, water hyacinth	128
2009	A. Lotus, com. Salvinia, alligator weed	50
2010	water hyacinth, alligator weed, A. lotus	60
2011	A. lotus, alligator weed, pennywort	129
2012	A. lotus, alligator weed, coontail	273

HISTORY OF REGULATIONS

Recreational

Statewide regulations for all fish species, the 2013 recreational fishing regulations may be viewed at the link below:

http://www.wlf.louisiana.gov/fishing/regulations

Commercial

All forms of commercial fishing were prohibited by the by LA Legislature in 1950's at request of Tensas Parish Police Jury. The action was taken against LDWF biologists recommendations. In 1983 the law was revised to allow the harvest of commercial fish. Commercial fishing is now allowed but with certain special restrictions:

- 1. The applicant must obtain a special Lake Bruin commercial fishing permit
- 2. Commercial fishing is allowed only during a special recurring season from November 1 to the end of February of each year

- 3. Minimum bar length mesh size for commercial gill nets and trammel nets in Lake Bruin is 3.5".
- **4.** Commercial fishermen must file a catch report with the District II Inland Fisheries Manager at the end of the season. (SEE BELOW)

TITLE 56 WILDLIFE AND FISHERIES

PART VII. FISH AND OTHER AQUATIC LIFE

SUBPART B. MISCELLANEOUS PROVISIONS APPLICABLE TO CERTAIN WATER BODIES

§401. Commercial seining prohibited in Lake Bruin and other lakes: penalty

No person shall seine fish for commercial purposes in Lake Bruin in the parish of Tensas and in the Fool River in the parish of Franklin. The department shall take such steps as necessary to prevent the seining of fish for commercial purposes at any time in those two areas. Violation of this Section constitutes a class two violation.

Acts 1974, No. 223, §2. Amended by Acts 1981, No. 837, §3; Acts 1982, No. 746, §1.

§402. Commercial fishing in Lake Bruin prohibited; penalty

All catching of fish in any manner for commercial purposes in Lake Bruin including that part of the lake called Brushy and the following streams and bayous leading into or out of Lake Bruin: Bruin's Bayou, Choctaw Bayou, Ruth's Ditch, Catfish Bayou, Blue Hole, or Gillespie Ditch situated in the parish of Tensas, is prohibited. The department shall take such steps as necessary to prevent the catching of fish in any manner for commercial purposes at any time in the lake and its tributaries. The department may provide for open season and permit the taking of commercial fish from those waters for reasonable periods when in its judgment and discretion no harm would result there from and the taking would tend to the conservation and replenishment of the fish and aquatic life in Lake Bruin. Violation of this Section constitutes a class two violation.

Acts 1974, No. 223, §2. Amended by Acts 1981, No. 837, §3.

Title 76 - WILDLIFE AND FISHERIES Part VII. Fish and Other Aquatic Life Chapter 1. Freshwater Sports and Commercial Fishing

125. Lake Bruin

The Louisiana Wildlife and Fisheries Commission hereby establishes and permits a special recurring commercial fishing season, allowing the use of certain nets and slat traps, in Lake Bruin, Tensas Parish, Louisiana. The season will commence each year at sunrise on November 1 and close at sunset on the last day of February the following year.

1. Commercial fishing with certain nets and slat traps will be allowed on Lake Bruin only during the above described special season and only by licensed commercial fishermen who must also obtain a Lake Bruin commercial fishing permit from the Louisiana Department of Wildlife and Fisheries. The permit will be issued at no cost on a seasonal basis and must be

renewed for each season. The permittee must also file a report to the Department of Wildlife and Fisheries of his catch that is postmarked no later than 15 days after the close of that season. The use of nets in Lake Bruin will be limited to gill and trammel nets greater than or having at least a minimum mesh of 3 1/2" bar and 7" stretch.

- 2. Commercial fishing will be allowed only during daylight hours except that gear can remain set overnight but fish captured may be removed during daylight hours only.
- 3. Failure to comply with the terms of the special permit or of any Louisiana commercial fishing regulations shall result in immediate cancellation of the permit for the remainder of the current season.
- 4. Failure to submit a timely report for a particular year's commercial fishing season shall result in the denial of a permit for the next year. If a report is eventually received after the deadline period for a particular year, the applicant may get a permit after skipping a year, however, if no report is ever filed, no permit for any subsequent year will be considered.
- 5. Applicants with a citation(s) pending for three years or less, which is a Class Two fish or game violation(s) or greater shall be denied a permit until such time as the applicant appears before department officials for the purpose of reviewing the citation(s) issued. The secretary, after reviewing the proceedings, may issue or deny the permit.
- 6. Permits shall not be issued to any applicant who within three years of the date of his/her application, has been convicted or pled guilty to a Class Two fish or game violation or greater, as defined in the laws pertaining to wildlife and fisheries.
- 7. Applicants convicted of, or pleading guilty to two or more Class Two fish or game violations or greater within five years of the application date shall not receive a permit.

AUTHORITY NOTE: Promulgated in accordance with R.S. 56:22, R.S. 56:326.3 and R.S. 56:402. HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission, LR 13:502 (September 1987), amended LR 18:294 (March 1992).

Size Limits

The 2013 commercial fishing regulations may be viewed at the link below: http://www.wlf.louisiana.gov/fishing/regulations

DRAWDOWN HISTORY

Lake drawdowns were conducted in 1988, 1989, 1990, 2005, and 2011. Typically, the lake is lowered 4-5 feet below pool from Sept. 1 to Dec. 31.

Maximum drawdown potential is limited to about 5 feet. Approximately 10-15% of the lake bottom is exposed at that elevation.

Purpose

Maintain fish population balance, improve game fish spawning substrate, control submerged vegetation, and to allow for shoreline property maintenance. One goal of the 2011 drawdown was to de-water Brushy Lake to allow the Parish to manipulate the lake bottom in an effort to reduce aquatic vegetation and increase access into this shallow area. Though the drawdown exceeded over five feet, an earthen dam prevented complete drainage of this area, thus the project was not completed.

Success

Increased abundance of game fish and forage were indicated by sampling subsequent to the 1988-1990 series of drawdowns. Only temporary reduction in submerged vegetation was observed.

Fishing closure

Fishing was not prohibited during the drawdowns

Who operated structure?

Lake Bruin Commission (now Lake Bruin Recreation and Water Conservation District) and Tensas Parish Police Jury

Fish kills

Drawdown associated kills are not normally observed, though a kill did occur during the 2011 drawdown. The kill affected primarily 2-3 inch threadfin shad and was most likely caused by a lake "turnover" following a major storm event during October, while the lake was at approximately 5 ft. below pool stage.

FISH KILLS / DISEASE HISTORY

- 1. Largemouth bass virus was confirmed as the cause in the investigation of one Lake Bruin fish kill. The kill lasted over an extended period of time throughout the summer of 2001. Mortality rate was documented at >100 bass/day in the early days, and ranged from 5-20 bass/day for the remainder of the kill.
- 2. On October 7, 2002 Hurricane Lili caused rapid destratification or "turnover" of Lake Bruin. The resulting low level of dissolved oxygen (DO) initiated a large fish kill involving several thousand fish of all species.

- 3. Sept. 7, 2011: Approximately 80 dead fish of various species were found directly across from Netterville's Landing. Sunfish, largemouth bass, and crappie were the most abundant of these fish. The kill was believed to have been in association with Tropical Storm Lee, which passed through the area three days prior.
- 4. Oct. 6, 2011: An estimated 57,500 threadfin shad and three black crappies were found dead along the shoreline in the proximity of Netterville's Landing. The lake level was 5 feet below pool stage at the time, though this was not believed to be a factor. Symptoms of a lake turnover were described by local residents. A cool front earlier in the week could have contributed as well.

CONTAMINAMTS / POLLUTION

Updated information available from Louisiana Department of Environmental Quality website at: www.deq.louisiana.gov

Water quality

Lake Bruin is listed as impaired in accordance with a Consent Decree agreed upon between EPA and plaintiffs and signed by the judge in the case on April 1, 2002. The 2002 Consent Decree contains what became the 2002 Consent Decree 303(d) List.

Suspected Causes of Impairment are listed as Nutrients, Organic enrichment/low DO, and Pesticides.

Water level

Pool stage is 62 feet MSL. Water levels are monitored by a USGS gauge located at Lake Bruin State Park

BIOLOGICAL

Fish samples

Lake Bruin was assessed for fisheries regularly by conducting biomass surveys (rotenone) from 1950's up until 1998; since 1989 the lake has been sampled by electro-fishing, gill netting, frame nets and shoreline seining (Table 4).

Note: All standardized sampling data collected by Inland Fisheries from 1965 through present are computerized. Any data prior to 1965 in the form of paper documents or reports are listed below:

Pre 1965 - Rotenone data summary sheets are on file at the District 2 Office in Monroe. A summary of sampling by year is given in Table 4 below.

Table 4. Summary of historical, present and proposed fisheries samples taken on Lake Bruin, LA from 1954 to 2016.

YEAR	SAMPLING GEAR
1954	Rotenone – 2 one acre samples
1955	Rotenone – 2 one acre samples
1956	Rotenone – 3 one acre samples
1957	No sampling
1958	Rotenone – 3 one acre samples
1959-1963	No sampling
1964	Rotenone – 3 one acre samples
1965	Rotenone – 3 one acre samples
1966	No sampling
1967	Rotenone – 4 one acre samples
1968	Rotenone – 4 one acre samples
1969	Rotenone – 4 one acre samples
1970	Rotenone – 3 one acre samples
1971	Rotenone – 4 one acre samples
1972	Rotenone – 4 one acre samples
1973	Rotenone – 4 one acre samples
1974	Rotenone – 4 one acre samples
1975	Rotenone – 4 one acre samples
1976	Rotenone – 4 one acre samples
1977	Rotenone – 3 one acre samples
1978	No sampling
1979	Rotenone – 2 one acre samples
1980	Rotenone – 4 one acre samples
1981	Rotenone – 2 one acre samples
1982	Rotenone – 2 one acre samples; Gill netting – 2 days each $1 \frac{1}{4}$ ", $1 \frac{3}{4}$ " and $2 \frac{1}{4}$ " mesh.

1983	Rotenone – 2 one acre samples; Gill netting – 6 days each 3", 3 $\frac{1}{2}$ " and 4" mesh.		
1984	Rotenone – 2 one acre samples		
1985	Rotenone – 3 one acre samples; Gill netting – 9 days each 3", $3\frac{1}{2}$ " and 4" mesh.		
1986	Rotenone – 2 one acre samples		
1987	Rotenone – 3 one acre samples		
1988	No sampling		
1989	Rotenone – 2 one acre samples; Electro-fishing -11-15 minute samples in Spring & 4-15 minute samples in Fall		
1990	Rotenone – 2 one acre samples; Electro-fishing – 6-15 minute samples in Spring & Fall; shoreline seining – 4 samples		
1991	Electro-fishing – 6–15 minute samples in Spring, 4 in Fall; shoreline seining – 5 samples		
1992	No sampling		
1993	Electro-fishing – 6-15 minute samples in Spring and Fall; Frame Nets – 6 stations (crappie age & growth)		
1994	No sampling		
1995	Standardized Gill Netting $(2 \frac{1}{2} \text{"}, 3\text{"}, 3 \frac{1}{2} \text{"} 4\text{"}) - 2 \text{ stations};$ shoreline seining -2 stations		
1996	Electro-fishing – 4-15 minute samples in Spring and Fall; Standardized Gill Netting – 4 stations; shoreline seining – 3 stations		
1997	Frame Nets – 4-stations (crappie age & growth)		
1998	Rotenone – 2 one acre samples; Electro-fishing – 4-15 minute samples in Spring and Fall;		
1999	Standardized Gill Netting – 3 stations		
2000	Electro-fishing – 3-15 minute samples in Spring and Fall		
2001	Electro-fishing – 6-15 minute samples in Spring and 5 in Fall; Standardized Gill Netting – 2 stations; Shoreline Seining – 4 stations		
2002	No Sampling		

2003	Electro-fishing – 3-15 minute samples in Spring and Fall; LMB age, growth & genetics; Standardized Gill Netting – 2 stations; Shoreline Seining – 3 stations		
2004	Electro-fishing – 4-15 minute samples in Spring and Fall; Standardized Gill Netting – 2 stations; Shoreline Seining – 3 stations		
2005	Shoreline Seining – 3 stations		
2006	Electro-fishing – 4-15 minute samples in spring and fall; LMB age, growth & genetics; shoreline seining – 3 stations; Standardized Gill Netting – 3 stations		
2007	No sampling		
2008	Electro-fishing – 4-15 minute samples in spring and fall; shoreline seining – 2 stations; Standardized Gill Netting – 3 stations		
2009	Electrofishing: (7) 15 min. samples in spring, (5) 15 min. samples in fall		
2011	Electrofishing: (4) 15 min. samples, spring and fall (incl. forage)		
2012	Standardized Gill Netting: 3 stations		
2013	Electrofishing: (4) 15 min. samples, spring and fall (incl. forage) Year 1: Largemouth Bass and Crappie Mortality Study (genetics, age and growth) Lead Nets: 6 stations		
2014	Electrofishing: (4) 15 min. samples, spring and fall (incl. forage) Year 2: Largemouth Bass and Crappie Mortality Study (genetics, age and growth, and creel survey) Lead Nets: 6 stations		
2015	Electrofishing: (4) 15 min. samples, spring and fall (incl. forage) Year 3: Largemouth Bass and Crappie Mortality Study (genetics, age and growth) Recreational Creel Survey Lead Nets: 6 stations		
2016	Standardized Gill Netting: 3 stations		

Stocking History

Hybrid striped bass and Florida bass have been the most commonly stocked fish into Lake Bruin. The hybrid striped bass have been stocked for forage control and for recreational

angling. Florida bass have been stocked in an effort to produce bass that are larger than typical size for this waterbody. The stocking history of these species is listed below (Table 5).

Table 5. The stocking history by year and by species for Lake Bruin, LA, 1972 -2012.

- 2012. STRIPED BASS/HYBRID FLORIDA LARGEMOU			
YEAR	STRIPED BASS	BASS	
1972	13,000 (Stripers)		
1974	11,700 (Stripers)		
1975	28,800 (Stripers)		
1976 1977	30,000 (Stripers) 44,000 (Stripers)		
1978	30,000 (Stripers)		
1979	30,000 (Stripers)		
1983	30,000 (Hybrids)		
1984	30,000 (Hybrids)		
1985	30,000 (Hybrids)		
1986	32,000 (Hybrids)		
1987	32,600 (Hybrids)		
1988	30,000 (Hybrids)		
1989	30,000 (Hybrids)		
1990	15,000 (Hybrids)		
1991	30,600 (Hybrids)		
1992	25,000 (Hybrids)		
1993	150,000 (Hybrid fry)		
1994	300,000 (Hybrid fry)		
1995	229,000 (Hybrid fry)		
1999	31,600 (Hybrids)	29,000 (Fingerlings)	
2000		37,000 (Fingerlings)	
2002	30,130 (Hybrids)	20,000 (Fingerlings)	
2003		30,680 (Fingerlings)	
2004	32,500 (reciprocals)		
2005	26,700 (reciprocals)	30,100 (Fingerlings)	
2006	30,588 (Hybrids)	1,001 (Phase II)	
2007	30,108 (Hybrids)	30,037 (Fingerlings)	
2008		851 (Phase II)	
2009	30,644 (Hybrid fingerling's)	36,786 (Fingerlings)	

2010	45,168 (reciprocals)	
2011		
2012		9,186 (Fingerlings)

Genetics

Genetic testing of largemouth bass has showed a small percentage of Florida subspecies and F1 hybrids with the northern species predominant. This was after only 3 years of stocking at 10 fingerlings per acre beginning in 1999. Genetics sampling was conducted again in 2006 and showed an increase in Florida influence (Table 7).

Table 7. Genetic analyses of largemouth bass from Lake Bruin, LA.

YEAR	NORTHERN	FLORIDA	HYBRID	FLORIDA INFLUENCE
2003	95%	1%	4%	5%
2006	90%	3%	7%	10%

Species profile (Table 6).

Table 6. List of fish species documented in Lake Bruin.

Gar Family, LEPISOSTEIDAE

Spotted gar, *Lepisosteus oculatus* (Winchell) Longnose gar, *Lepisosteus osseus* (Linnaeus)

Shortnose gar, Lepisosteus platostomus Rafinesque

Bowfin Family, AMIIDAE

Bowfin, Amia calva Linnaeus

Freshwater Eel Family, ANGUILLIDAE

American eel, *Anguilla rostrata* (Lesueur)

Herring Family, CLUPEIDAE

Gizzard shad, $Dorosoma\ cepedianum\ (Lesueur)$

Threadfin shad, *Dorosoma petenense* (Günther)

Minnow Family, CYPRINIDAE

Blacktail shiner, Cyprinella venustus (Girard)

Common Carp, Cyprinus carpio Linnaeus

Golden shiner, Notemigonus crysoleucas (Mitchill)

Emerald shiner, Notropis atherinoides Rafinesque

Pugnose minnow, Notropis emiliae Hay

Bullhead minnow, *Pimephales vigilax* (Baird and Girard)

Sucker Family, CATOSTOMIDAE

Smallmouth buffalo, *Ictiobus bubalus* (Rafinesque) Bigmouth buffalo, *Ictiobus cyprinellus* (Valenciennes)

Black buffalo, *Ictiobus niger* (Rafinesque)

Freshwater Catfish Family, ICTALURIDAE

Yellow bullhead, *Ameiurus natalis* (Lesueur) Channel catfish, *Ictalurus punctatus* (Rafinesque)

Flathead catfish, *Pylodictis olivaris* (Rafinesque)

Pirate Perch Family, APHREDODERIDAE

Pirate perch, Aphredoderus sayanus (Gilliams)

Killifish Family, CYPRINODONTIDAE

Blackstripe topminnow, *Fundulus notatus* (Rafinesque) Blackspotted topminnow, *Fundulus olivaceus* (Storer)

Livebearer Family, POECILIIDAE

Western mosquitofish, Gambusia affinis (Baird and Girard)

Silverside Family, ATHERINIDAE

Inland silverside, Menidia beryllina (Cope)

Pipefish and Seahorse Family, SYNGNATHIDAE

Gulf pipefish, Syngnathus scovelli (Evermann and Kendall)

Temperate Bass Family, PERCICHTHYIDAE

White bass, *Morone chrysops* (Rafinesque)

Yellow bass, Morone mississippiensis Jordan and Eigenmann

Palmetto bass, *Morone saxatilis x Morone chrysops*

Sunfish Family, CENTRARCHIDAE

Green sunfish, Lepomis cyanellus Rafinesque

Warmouth, Lepomis gulosus (Cuvier)

Orangespotted sunfish, Lepomis humilis (Girard)

Bluegill, *Lepomis macrochirus* (Rafinesque)

Dollar sunfish, *Lepomis marginatus* (Holbrook)

Longear sunfish, Lepomis megalotis (Rafinesque)

Redear sunfish, *Lepomis microlophus* (Günther)

Spotted sunfish, *Lepomis punctatus* (Valenciennes)

Spotted bass, *Micropterus punctulatus* (Rafinesque)

Florida largemouth bass, *Micropterus floridanus* (Kassler et al.)

Northern largemouth bass, Micropterus salmoides (Lacépède)

White crappie, *Pomoxis annularis* Rafinesque

Black crappie, *Pomoxis nigromaculatus* (Lesueur)

Family PERCIDAE

Logperch, *Percina caprodes* (Rafinesque)

Drum Family, SCIAENIDAE

Freshwater drum, Aplodinotus grunniens Rafinesque

Threatened/endangered/exotic species

Freshwater Mussels - Because of the presence of the Louisiana Pearlshell, *Margaritifera hembeli*, mussel harvest and possession of mussels is prohibited in Lake Bruin (LAC 76:161-F (2(f))

CREEL

No recreational angler surveys have been conducted in Lake Bruin.

Historic information

No creel surveys have been conducted.

Current methods

Access point method will be used in future angler surveys.

HYDROLOGICAL CHANGES

Lake Bruin was completely cut off from the Mississippi River by construction of flood control levees by the federal government in the 1920's and no longer receives backwater flooding. Construction of the spillway in Ruth Ditch in the 1950's raised the pool stage of the lake by several feet. Additional information relative to hydrology and limnology of Lake Bruin and other Louisiana waterbodies can be found at the attached link: http://la.water.usgs.gov/

Water use

Hunting: Very little hunting due to residential development, however, large numbers of various waterfowl species do winter on the lake. Alligator trapping is allowed with tags issued by LDWF in a public lottery.

Skiing: Very popular for water skiing, jets skis, party barges, sail boats and other recreational boats.\

Scuba Diving: Visibility is too low for most recreational SCUBA divers; some free diving, SCUBA and Hookah rig diving by catfish hand grabbers.

Swimming: Lake Bruin gets a lot of swimming use around private piers and homes and the public swimming beach at Lake Bruin State Park.

Irrigation: Lake Bruin is used as a source of irrigation by lake residents for lawns and gardens and by farmers for row crops.

Public Drinking Water: Lake Bruin is used as a public water supply for the Newellton Water System, the Lake Bruin Water System, and the Tensas Water system.

APPENDIX I - Authorization

(return to Authorization)

RS 38:3087.91-107

PART XX. LAKE BRUIN RECREATION AND WATER CONSERVATION DISTRICT

§3087.91. Creation

There is hereby created a recreation and water conservation district to be known as the "Lake Bruin Recreation and Water Conservation District".

Acts 1995, No. 1045, §1.

§3087.92. Location

The district shall be comprised of the area of Lake Bruin and Brushy Lake and all of the land encompassed by Louisiana State Highways Nos. 604 and 605 surrounding Lake Bruin and Brushy Lake, and the area a total of two hundred yards wide which extends one hundred yards from and on each side of the centerline of Choctaw Bayou from Highway 605 to U.S. Highway 65, excluding the land on Lake Bruin Island on the landside of Louisiana State Highway No. 606.

Acts 1995, No. 1045, §1.

§3087.93. District as political subdivision and body corporate; purpose and powers

- A. The district so created shall be a political subdivision of the state of Louisiana which shall have for its purpose the preservation, promotion, and development of the wealth and natural resources of the district by the conservation of the soil and water of Lake Bruin for agricultural, recreational, commercial, and sanitary purposes and by the regulation of aquatic plant growth.
- B. It shall constitute a body corporate in law with all powers, rights, privileges, and immunities of a corporation. It shall have the power to sue and be sued, to buy and sell, to levy taxes, to negotiate and execute contracts, and to incur debts and issue negotiable bonds in payment thereof under and in accordance with existing law. It shall have the authority to acquire by purchase, donation, or otherwise every type and specie of property, including servitudes and rights of use necessary to its purpose, and to lease, build, operate, and maintain any works or machinery designed to accomplish the purposes of the district.
- C. It shall have complete control over the supply of fresh water of Lake Bruin and Brushy Lake which shall be administered for the benefit of the persons residing or owning property within the district, and if it should be for the benefit of the district it shall have the authority to sell such water for irrigation, municipal, and industrial uses both within and

outside the district. However, the district shall have no authority to regulate or control any use by any municipality, district, or other person of such water supply which use was being made by such municipality, district, or other person on August 15, 1995, including no authority to charge or collect any fee or charge therefor.

D. The district shall constitute an instrumentality of the state of Louisiana designed to carry out an essential governmental function, and all of the property of the district shall be exempt from state and local sales and use taxation. It shall have the authority to cooperate and contract with the government of the United States or any department or agency thereof and to accept grants and donations of property and money therefrom. It shall have the authority to cooperate with the state of Louisiana or any political subdivision, department, agency, or corporation of the state for the management of the waters of Lake Bruin and Brushy Lake and the construction, operation, and maintenance of facilities designed to accomplish the purpose for which the district is created on any basis including the matching of funds and by participating in projects authorized by any federal or state law as it shall see fit.

Acts 1995, No. 1045, §1.

- §3087.94. Board of commissioners, appointment; tenure; vacancies; compensation; domicile
 - A. The district shall be governed and controlled by a board of seven commissioners, each of whom shall be a qualified elector of the state of Louisiana, owning property within the district. At least five commissioners shall reside in Tensas Parish, four of whom must reside in the district. Two commissioners may reside outside of Tensas Parish.
 - B. The initial members of the board of commissioners shall be appointed by the Tensas Parish Police Jury. One member shall be appointed from a list of no more than three names submitted by the mayor and board of aldermen of the town of Newellton; one shall be appointed from a list of not more than three names submitted by the mayor and board of aldermen of the town of St. Joseph; and one member shall be appointed from a list of not more than three names submitted by the mayor and board of aldermen of the town of Waterproof. The initial members of the board shall serve as follows: three commissioners shall serve a five-year term, two commissioners shall serve a three-year term, and two commissioners shall serve a one-year term. Commissioners shall draw lots for their initial terms at the first commission meeting. Thereafter, all commissioners shall serve five-year terms. After the initial appointments, upon expiration of a term of a member of the board of commissioners, the police jury shall appoint a successor from a list of two names submitted by the board of commissioners. A commissioner may not serve more than two consecutive terms of any length, even if one term is shorter than five years. Any vacancy in the office of commissioner due to death, resignation, or any other cause, other than expiration of a term of office, shall be filled by the president of the board with majority approval of the board for the remainder of the unexpired term.
 - C. Members of the board of commissioners shall receive no compensation for their services.
 - D. The board shall be domiciled at St. Joseph, Louisiana. Acts 1995, No. 1045, §1.

§3087.95. Oaths

Before entering upon his official duties each member of the board of commissioners shall take the oath of office provided by Article X, Section 30 of the Constitution of Louisiana before an officer authorized by law to administer oaths.

Acts 1995, No. 1045, §1.

§3087.96. Election of officers

Immediately after the members of the board of commissioners have been appointed, or as soon as thereafter is practicable, they shall meet and organize by electing from their number a president, vice president, and secretary who shall perform the duties normally required of such officers.

Acts 1995, No. 1045, §1.

§3087.97. Powers of the board

- A. In order to accomplish the purposes for which the district is created, the board of commissioners may:
- (1) Purchase, acquire by donation, hold, sell, and convey immovable and movable property and execute such contracts as it may deem necessary or convenient to enable it to properly carry out the purposes for which it is created.
- (2) Acquire servitudes and rights of use by purchase, by donation, and by assignment for the district or otherwise.
- (3) Assist in conserving soil and water and in developing the water resources of the district, provided nothing shall be done to interfere with districts or municipalities previously organized under Louisiana law.
- (4) Cooperate with the state Department of Transportation and Development and other state agencies in the maintenance or improvement and the construction of any works or improvements for the control, retention, diversion, or utilization of water; retard runoff of water and soil erosion; construct any ditch, channel improvement, dike, dam, or levee, and repair, improve, and maintain any of said improvements or structures.
 - (5) Manage and control the water level and growth of aquatic plants in the lakes.
- (6) Employ and hire secretarial, clerical, and other such personnel as may be necessary in the operation of the business of the district and fix their compensation; employ engineers, attorneys, and other professional personnel as necessary and fix their compensation.
- (7) Levy taxes, issue bonds, and incur indebtedness within the limitations prescribed by the constitution and laws of Louisiana, and in the manner prescribed thereby.
- (8) Cooperate and contract with persons, firms, associations, partnerships, private corporations, cities of this state, or other public corporations, and with any other local, state, and governmental agencies for the sale or use of any waters impounded by the district.

- (9) Grant franchises to telephone, telegraph, cable, and electric power companies and grant franchises for the purposes of laying gas, sewer, electricity, or other utilities to supply the inhabitants or any person or corporation with gas, water, sewerage, and electricity, when such construction is within the district. Nothing contained in this Part shall affect the vested rights of any corporation which pursuant to R.S. 45:781(A), has constructed, and maintains and operates telegraph, telephone, and other lines for the transmission of intelligence prior to August 15, 1995.
- (10) Appoint, hire, designate, and empower wardens, rangers, patrols, and such other personnel as may be deemed necessary by the commission for the enforcement of such regulations as may be promulgated and adopted by said commission.
- (11) Do and perform any and all things necessary or incidental to the fulfillment of the purposes for which the district is created.
- B. The Lake Bruin Recreation and Water Conservation District may have, with respect to the improvements and maintenance of the district, the advice of the Department of Transportation and Development, and it may request from time to time the assistance of the department to make such surveys, inspections, and investigations, render such reports, estimates, and recommendations, and furnish such plans and specifications as the board of commissioners of said district may request.
- C. The district is hereby authorized to incur debt for any one or more of its lawful purposes, to issue in its name negotiable bonds or certificates of indebtedness evidencing such debt, and to provide for the security and payment thereof as follows:
- (1) To issue certificates of indebtedness maturing within one year from date of issuance to evidence money borrowed in anticipation of current revenues for the administration, operation, construction, and maintenance costs and expenses of the district, which certificates shall be payable in principal and interest from any available income, revenues, fees, or taxes pledged to their payment by the district.
- (2) To issue bonds substantially in the manner set forth in Article VI of the Constitution of Louisiana, and other authority supplemental thereto, particularly Part III of Chapter 4 of Subtitle II of Title 39 of the Louisiana Revised Statutes of 1950. Such bonds shall be payable from an ad valorem tax on all taxable property in the district sufficient to pay such bonds in principal and interest, when approved by vote of a majority in number of the qualified electors voting on the proposition at an election held for that purpose. Such bonds shall be issued in the manner provided by the law pursuant to which they are being issued and the maximum interest rate for the bonds shall be that prescribed by such law. The bonds shall be issued in such amount or amounts as the board of commissioners shall determine. However, the principal amount of all such bonds outstanding as of the date of the issuance of any new bonds shall never exceed ten percent of the assessed valuation of the taxable property within the district, to be ascertained by the last assessment roll of record in Tensas Parish.
- (3) The district shall have additional authority to levy taxes under the provisions of Article VI, Section 32 of the Constitution of Louisiana, for the purpose of improving,

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operating, and maintaining its facilities, provided any such tax shall first be approved at an election held for said purpose in accordance with the Louisiana Election Code.

(4) The copy of any resolution levying a tax, certified by the secretary of the board of commissioners of said district, shall be transmitted to the tax assessor of Tensas Parish on or before the first of the year in which the tax is to be assessed and collected, and it shall be the duty of the assessor to assess the tax and extend the same upon the tax rolls of the parish. The tax shall be collected by the sheriff and ex officio tax collector of Tensas Parish in the same manner as taxes levied by the parish. Taxes assessed shall constitute the same liens upon the property assessed, shall bear the same penalties, and collection thereof shall be enforced in the same manner and at the same time as parish taxes.

Acts 1995, No. 1045, §1.

§3087.98. Parcel fee

- A.(1) The Lake Bruin Recreation and Water Conservation District may levy and collect a parcel fee within its boundaries which shall not exceed one hundred dollars per parcel per year, which parcel fee shall be imposed by resolution or ordinance of the board of commissioners of the district only after the question of the imposition of the parcel fee and the purpose, rate, and duration of such fee has been approved by a majority of the qualified electors of the district voting at an election held therein. The proceeds from the levy of said parcel fee shall be expended for costs of operation of the district, including management and control of water levels and aquatic plant growth within the district and protection and preservation of the works, improvements, and properties owned or controlled by the district, prescribing the manner of their use by public corporations and persons, and preserving order within and adjacent thereto. Any parcel fee imposed pursuant to this Section shall be levied and collected and be due and owing annually. Such fee may be carried on the tax rolls for Tensas Parish and collected at the same time as parish ad valorem taxes.
- (2) If any parcel fee is not paid when due, the district shall proceed against the parcel for collection of the amount of the fee unpaid and delinquent, any collection costs incurred by the district plus interest at a rate not exceeding twelve percent on the unpaid amount of the parcel fee, and in the event legal proceedings are necessary to effect collection, court costs, and reasonable attorney fees. However, attorney fees shall be payable by the parcel owner only if demand by the board of commissioners has been made on said owner by certified mail, and such parcel owner has failed to pay the amount due within ten days after such demand.
- (3) A judgment obtained for nonpayment of a parcel fee, upon being recorded in the mortgage records of Tensas Parish, shall prime all other liens except those for taxes and prior recorded local or special assessments. If there are one or more property mortgages on such parcel and the mortgage holder or holders have notified the tax collector in the parish of such recorded mortgage in accordance with the requirements of R.S. 47:2180.1, the district, prior to proceeding against such parcel for failure to pay a parcel fee, shall give notice to each mortgagee of the amount of the parcel fee due and owing on such parcel and that such fee must be paid within twenty days after mailing the notice or proceedings will be commenced

against the parcel. The notice shall be sent to each such mortgage holder by certified mail, return receipt requested, or by personal or domiciliary service on such mortgage holder.

- B.(1) The district may incur debt and issue bonds payable from an irrevocable pledge and dedication of all or a portion of the proceeds of the parcel fee, provided that the question of funding said proceeds into bonds shall have been approved by a majority vote of the qualified electors of the district voting at an election held therein and the State Bond Commission has approved the issuance of the bonds. The question or proposition with respect to the funding of the proceeds of the parcel fee may be submitted at a separate election held for that purpose. The maturities of the bonds shall be so arranged that the total amount of principal, and interest falling due in such year on all bonds theretofore issued payable from such parcel fee, shall not exceed eighty percent of the estimated proceeds to be received from the levy of such parcel fee in the calendar year in which the bonds are issued.
- (2) The bonds may be sold at public or private sale and shall be issued pursuant to the provisions of a resolution adopted by the board of commissioners of the district, provided the bonds shall mature over a period not to exceed the period for which the parcel fee, the proceeds of which are to be used to pay principal and interest on the bonds, is authorized. The bonds and the income therefrom shall be exempt from taxation by the state and by any parish, municipality, or political subdivision thereof.
- C. The district may incur debt and issue certificates of indebtedness pursuant to the provisions of R.S. 33:2921 through 2925, subject to the approval of the State Bond Commission.
- D. A "parcel" as used in this Section shall mean one or more lots, subdivided portions of ground, or individual tracts identified by an individual assessment number on the assessment rolls of Tensas Parish. A partial owner of a parcel shall be responsible for that proportion of the parcel fee equal to the proportion of the value of the entire parcel assigned to the partial owner on the assessment roll.
- E. The district may create different classes of real estate and present to the voters a proposition to levy or impose different parcel fees for each class.

Acts 1995, No. 1045, §1.

§3087.99. Rules and regulations

In order to accomplish the purposes of the district to manage and control water levels and the growth of aquatic plants and to protect the works, improvements, and property of the district, both immovable and movable; to secure the best results from the construction, operation, and maintenance thereof, and to prevent damage to the district by misuse of any works, improvements, or properties or by the pollution by solid or liquid substance or misuse of the waters of the district or any watercourse therein, the board of commissioners may make and enforce such rules and regulations as it shall deem necessary and advisable:

(1) To manage and control the water level and the growth of aquatic plants in the lakes.

- (2) To protect and preserve the works, improvements, and properties owned or controlled by the district, prescribe the manner of their use by public corporations and persons, and preserve order within and adjacent thereto.
- (3) To prescribe the manner of building bridges, piers, boathouses, seawalls, roads, and fences, including fences for the control of livestock or other works in, along, or across any channel or extending into the lake.
- (4) To prescribe the manner in which natural or artificial drains, ditches, sewers, pipelines, or other works shall be adjusted to or connected with the works of the district or any watercourse therein and the manner in which the watercourses of the district may be used for sewer outlets for disposal of waste.
- (5) To prescribe the permissible uses of the water supply provided by the lake and to prevent the pollution or unnecessary waste of such water supply.
- (6) To prescribe or regulate the discharge into sewers of the district of any liquid or solid waste deemed detrimental to the works and improvements of the district.
- (7) To establish rules and regulations and cause them to be enforced with regard to activities engaged in upon Lake Bruin and Brushy Lake which are not regulated by the Louisiana Wildlife and Fisheries Commission.

Acts 1995, No. 1045, §1.

- §3087.100. Construction which would impede flow of water in lake prohibited; pollution defined and prohibited; penalties fixed for violations
 - A.(1) No person or public corporation shall erect within the drainage area of the district any dam or reservoir upon any stream or watercourse which will affect the lake until a copy of the plans thereof has been filed with the board of commissioners and approved.
 - (2) Whoever violates this Subsection shall be fined not less than five hundred dollars nor more than one thousand dollars or imprisoned for not more than sixty days, or both.
 - B.(1) No person shall knowingly and willfully empty or drain or permit to be drained from any pump, reservoir, well, or oil field, into any stream or drain constituting the watershed of the lake, or from any stream within said district into said lake any oil, salt water, or other noxious, toxic, hazardous, or poisonous gas, liquid, or substance which would render the water unfit for irrigation purposes or for human consumption through "water districts" or would destroy aquatic and fish life in the lake.
 - (2) Each and every day that oil, salt water, or any other substance described in Paragraph (1) of this Subsection is permitted to flow into natural streams or drains which constitute the watershed of the lake shall constitute a separate and distinct offense.
 - (3) Whoever violates this Subsection shall be fined not less than one hundred dollars nor more than one thousand dollars or imprisoned for not more than three months, or both.
 - C.(1) No person shall:
 - (a) Obstruct drainage channels which compose any drain or stream flowing into the lake by bridging them except in accordance with plans, specifications, and instructions prescribed by the board of commissioners of the district.

- (b) Construct dams, locks, or gates in drainage channels of the watershed of the lake or into the lake itself without permission of the commission.
- (c) Anchor rafts, crafts, fish traps, fish cars, and other obstacles in the channel of any stream, drain, or natural flow of the feeder streams of the watershed of the lake or the lake itself.
 - (d) Float timber in the watershed of the lake.
- (2) Whoever violates this Subsection shall be fined not less than five hundred dollars nor more than one thousand dollars or imprisoned for not more than sixty days, or both.
- D.(1) No proprietor, owner, lessee, or possessor of land abutting upon the lake or upon any public road paralleling the water line or contiguous to the lake shall in any manner close or place any obstruction in any drain or ditch, whether on private property or on the public road or levee adjacent to the road, which will in any manner interfere with the effective, thorough, and continuous drainage into the lake.
- (2) Whoever violates this Subsection shall be fined not less than five hundred dollars nor more than one thousand dollars or imprisoned for more than sixty days, or both.

Acts 1995, No. 1045, §1.

§3087.101. Supervision by Department of Transportation and Development

All of the powers and duties relative to construction and letting of contracts for construction required to be advertised by R.S. 38:2211 and 2212 conferred upon the district shall be subject to and exercised under the supervisory control of the Department of Transportation and Development of the state of Louisiana, which department shall furnish to the district such engineering services as it shall require and may cooperate with the district in the construction of any work or facility considered necessary by the district and said department to the purposes of the district.

Acts 1995, No. 1045, §1

§3087.102. Contracts let by board

Any and all contracts of the district shall be let by the board of commissioners under the provisions of the Public Bid Law, R.S. 38:2181 et seq.

Acts 1995, No. 1045, §1.

§3087.103. Mineral rights

Whenever it shall become necessary for the district or the Department of Transportation and Development to acquire full ownership of any land for the purpose of constructing any work or facility within the district, the owner thereof in his own behalf or in behalf of his assigns in the event of a prior assignment may retain the mineral rights to such property together with the right to grant mineral leases and servitudes thereon. No form of prescription shall divest such owner or his assigns of these rights so long as the district or a department or agency of the state retains the ownership of the property, but should ownership pass into private hands, the prescription of nonuse provided by R.S. 31:27 shall apply as in the usual case.

Acts 1995, No. 1045, §1.

§3087.104. Tax exemption; mineral leases unabridged

Should the district or the Department of Transportation and Development acquire a servitude, right of use, or title in full ownership to immovable property or any other property, such property shall not be subject to any ad valorem tax or tax of any nature by the state of Louisiana or any political subdivision thereof so long as such property is used for the purpose of the district. The provisions of this Part shall in no way abridge the right of any individual, person, firm, or corporation from whom a servitude or right of use may have been acquired to lease the land subject thereto for the production of oil, gas, or other minerals and to produce or cause to be produced oil, gas, or other minerals from such property so long as said leases are subject to the terms and conditions of the servitude executed in favor of the commission.

Acts 1995, No. 1045, §1.

§3087.105. Playgrounds, parks, and other facilities

The board of commissioners shall have the power to cause to be created and constructed playgrounds, picnic grounds, grounds for recreation, parks, and any and all other facilities to accommodate the public and to provide adequate access to the lake, as may within the opinion of the board become necessary. The board of commissioners shall also provide for the construction of public access boat ramps in the district to allow for and maintain public access to Lake Bruin for recreational purposes.

Acts 1995, No. 1045, §1.

§3087.106. Regulation of commercial establishments

- A. The board of commissioners shall have authority:
- (1) To establish and cause to be enforced rules and regulations pertaining to all commercial establishments which may be constructed for the purpose of commercializing and making commercial use of the lake or its facilities.
- (2) To license and permit such establishments and to levy and collect a fee, to be fixed by the commission, for the privilege of making commercial use of the facilities of the lake.
- B. The rules and regulations established and promulgated by the board of commissioners pursuant to this Section shall provide penalties for any commercial establishment operating without a permit or license.

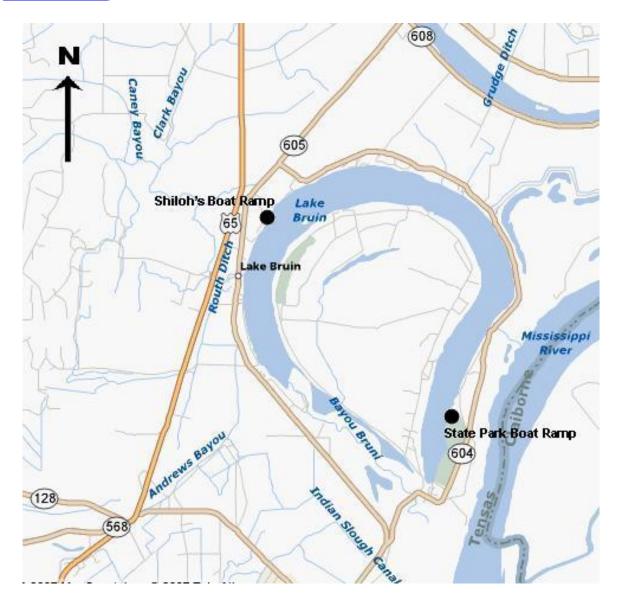
Acts 1995, No. 1045, §1.

§3087.107. Audit

The district shall be audited pursuant to R.S. 24:513. Acts 1995, No. 1045, §1.

APPENDIX II – ACCESS MAP

(return to Access)



APPENDIX III – TYPEMAPS

(return to Typemap)

2006 Lake Bruin Aquatic Vegetation Type Map

September 2006 – Dave Hickman

Aquatic vegetation was surveyed on Lake Bruin on September 11, 2006. The lake level was 37 in. below pool stage.

Most of Lake Bruin had a moderate amount of submersed vegetation within about 75 feet of the shore, with the exception of the southeastern quarter of the lake where no submersed vegetation was observed. There was a moderate amount of pondweed along about half of the shoreline and a moderate infestation of alligatorweed in Ruth Ditch and the upper end of the canal on the southeast end of the lake. The Brushy Lake portion appeared to be nearly completely covered with American lotus, coontail, and southern naiad, although low water levels restricted boat access.

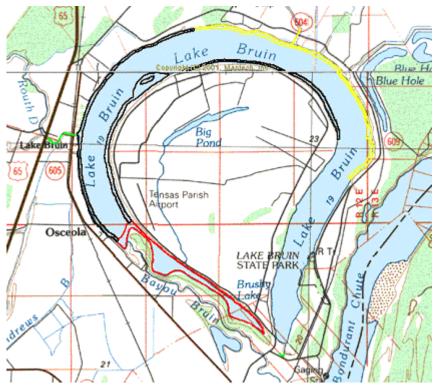


Fig. 1 Lake Bruin vegetation map.

Black: pondweed *Potamogeton* spp. (moderate from shore out to 5 ft. deep); coontail *Ceratophyllum demersum* (moderate to heavy out to 10 ft.)

Red: American lotus *Nelumbo lutea* (heavy out to 6 ft.); coontail (heavy out to 7 ft.); southern naiad *Najas guadalupensis* (heavy out to 7 ft.)

Yellow: coontail (moderate out to 10 ft.); southern naiad (moderate out to 6 ft.); muskgrass *Chara spp.* (light out to 4 ft); stonewort *Nitella sp.* (light out to 4 ft)

Green: Alligator weed Alternanthera philoxeroides (moderate out to 1 ft)